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EDUCATION

- Ph.D.** 1974, BIOPHYSICS, Institute of Chemical Physics, Russian Academy of Science (RAS)
M.S. 1970, PHYSICS, Physics Dept., Moscow State University

GRANTS FY (PI)

- 1987 Studying superconductivity transition by ESR technique (Russian Academy of Science) \$500K
 1998 Life in extreme environments (DRDF, JPL, NASA) \$150K
 2000 Using computer tomography for life detection (DRDF, JPL) \$200K
 2001 Removing organic contaminants from spacecraft with cold plasma (Mars program office) \$100K
 2003 Study of the Oldest Animal Fossils with X-ray tomography (DRDF, Caltech/JPL, NASA) \$120K
 2003 Three-dimensional visualization of the oldest fossils or early animals from Doushantuo Formation by Computer Tomography with high spatial resolution (President's Fund, Caltech, NASA) \$150K
 2005-09 Development a flyable CT scanner for life detection on Martian surface (ASTID, NASA) \$900K
 2005-09 Development of a Self-Contained, Subglacial, Native Fluorescence Detector for Measurement of Organic Molecules and Chemicals of Life (ASTID, NASA) \$800K
 2010-12 Martian Oxidant. Tribiochemistry. Exobiology program, NASA HQ, \$360K

Co-I

- 2004-06 The quantitative measurement and analysis of the evolution of ice and organic mixtures exposed to radiation in the space environment, RTD JPL, PI B. Smythe, total \$700K, \$150K for Tsapin
 2006-07 THz Tomography for In-Situ Water and Life Detection, RTD JPL, PI P. Siegel total \$450K, \$200K for Tsapin
 2005-2009 Sterilization of Spacecraft Materials and Extraterrestrial Samples Using Atmospheric Pressure Cold Plasma (Planetary Protection, NASA) \$800K total, \$180K for A. Tsapin

EMPLOYMENT

- 2004-present Discipline Program manager for Exobiology and SRLIDAP programs (JPL)
 1998-present Research Scientist, JPL/Caltech
 2002-2007 Research Professor, University of Southern California, Los Angeles
 1994 -1997 Research Associate in the Center for the Great Lakes Studies, University of Wisconsin
 1986 -1994 Head of Research group, Institute of Chemical Physics, Russian Academy of Science,
 1989-1991 Visiting Scientist, National Biomedical ESR Center, Medical College of Wisconsin, Milwaukee, WI
 1991-1991 Visiting Scientist, University Wisconsin-Milwaukee, Center for Great Lakes Studies, Milwaukee, WI
 1980-1986 Senior Research Fellow, Head of Laboratory, Institute of Chemical Physics, RAS

TEACHING EXPERIENCE

- 2002-06 Guest lecturer, Biogeochemistry (team taught course), USC
 1998-1998 Guest lecturer, Microbial metabolism, (team taught course), California Institute of Technology
 1997-1997 Visiting Professor, University Wisconsin Oshkosh, Dept. Microbiology
 1979-1988 Assistant professor of All-Union Polytechnic Institute,
 1978-1990 Supervisor of M. S. research program in biophysics and special courses
 Electron spin resonance spectroscopy (advanced)
 Superconductivity and magnetic resonance methods (special)
 Biophysics of Photosynthesis (advanced)

PROFESSIONAL MEMBERSHIPS AND COMMITTEES

- 2002 American Permafrost Association
 2002 American geophysical Union (AGU)
 1991 International EPR Society
 1994 American Chemical Society
 1995 American Society for Microbiology
 1989 Qualification Council at the Institute of Chemical Physics
 1989 Scientist's Association of Russia

COMMUNITY SERVICE

- 2003-2005 Board member of American Permafrost Association
 2005-2007 Captain of Caltech karate club

1998-present	Blood donor
2004	Member of program Committee for the 29 th meeting International Magnetic society.
2006-present	member of the Board of Directors for 1010 Development (housing in downtown LA for low-income.)

EDITORIAL ACTIVITIES

1972-1989	Reviewer for Biological Abstract and Physics Abstract
1996-present	Reviewer for Chemical Physical Letters

AWARDS

1988	Award from Russian Ac. Sci. for Studies of Superconductive materials.
1983	Award of the Institute of Chemical Physics for the Achievements in Scientific Research

SELECTED RECENT PUBLICATIONS (Short list)

(total number of publications in peer reviewed journals – over 70, available upon request)

- 1a. **A.I. Tsapin**, S. V. Stepanov and L. A. Blumenfeld. Interaction of microwave and high-frequency fields with type II superconductors in a constant magnetic field. Physics Letters A, Volume 132, pp. 375-380, 17 October (1988)
- 1b. B. V. Rozentuller, S. V. Stepanov, M. M. Shabarchina and **A. I. Tsapin**, SHF absorption in low magnetic fields in Mn---V---Mo oxide systems: possible new type of high-temperature superconductor, Physics Letters A, Volume 148, Issues 1-2, pp. 119-121 6 August (1990)
- 1c. **A. I. Tsapin**, James S. Hyde and W. Froncisz, Bimodal loop-gap resonator, Journal of Magnetic Resonance (1969), Volume 100, Issue 3, pp. 484-490 December 1992
- 1.A.I.Tsapin, Blumenfeld L.A., Spin-glass structure, J. Applied Physics, vol.75. p. 7183, (1994)
2. Levina A.A., Andreeva A.P., Tsibul'skaya M.M., **A.I.Tsapin**, Bykov S.S., Tokarev I.N., Transferrin-binding capacity in hypersideremia, Gematol-Transfuziol. v. 37, # 4, p-13-16, (1992).
- 3.**A.I.Tsapin**, Keppen O.I, Burbaev D.S., Nealson K. Studies of the iron-sulfur centers of the bacteria *Shewanella putrefaciens* MR-1, J. Appl. Magnetic Resonance, vol. 7, p. 559-566, (1994).
- 4.**A.I.Tsapin**, Keppen O.I, Burbaev D.S., Nealson K. Investigation of Succinate and Fumarate Reductase in Whole Cells of *Shewanella Putrefaciens* (Strains MR-1 and MR-7) Using Electron Spin Resonance Spectroscopy, J. Appl. Magnetic Resonance, vol. 9, pp. 509-516 (1995).
5. Xioanan Wu, **Alexandre Tsapin**, Yoon Shin Cho, Tou-Xang Lee, Sabine Metzger, Linda Genzlinger, Beatrice Holton, John Witmarsh, Toivo Kallas, Reconstitution of the 2Fe-2S center into overproduced Rieske protein and mutational analysis of inhibitor specificity in cytochrome b6 in cyanobacteria, Photosynthesis from light to biosphere, ed. Paul Mathis, vol. II, pp.769-772, (1995).
6. B. Holton, X. Wu, **A. Tsapin**, D. Kramer, R. Malkin, and T. Kallas, Biochemistry, vol. 35, #48, pp. 15485-15493, (1996).
7. **Tsapin A.I.**, K.H. Nealson, T. Meyer et.al. Purification and property of a low-redox-potential tetraheme cytochrome c₃ from *Shewanella putrefaciens*, J. Bacteriology, vol.178, p. 250-253, (1996).
8. D. Leys, **A. Tsapin**, K. Nealson, T. Meyer, M. Cusanovich & J. Van Beeumen, Structure and mechanism of the flavocytochrome c fumarate reductase of *Shewanella putrefaciens*, Nature Structural biology, vol. 6 Number 12, December ,p. 1113 - 1117 (1999)
- 9.Y. S. Cheng, C. A. Brantner, **A. Tsapin**, and M. L.Collins, Role of the H Protein in Assembly of the Photochemical Reaction Center and Intracytoplasmic Membrane in *Rhodospirillum rubrum*, J. Bacteriol. Vol. 182, pp. 1200-1207, (2000)
- 10.**A.I. Tsapin**, M.G. Goldfeld, G.D. McDonald, K.H. Nealson, B. Moskowitz, P. Solheid, K.H. Kemner, S.D. Kelly, and K.A. Orlandini, Iron (VI): Hypothetical candidate for the Martian Oxidant, Icarus, vol. 146, 68-78, (2000)
11. **A.I. Tsapin**, M.G. Goldfeld, K.H.Nealson, K.M.Kemner, B. Moskowitz, Self-Sterilizing properties of Martian Soil: Possible Nature and Implications, 30th International Conference on Environmental Systems, Toulouse, France, July 10-13, (2000).
12. K.Ozawa, **A.I. Tsapin**, K.H. Nealson, M.A. Cusanovich, and H. Akutsu, Expression of a tetraheme protein, *Desulfovibrio vulgaris* Miyazaki M cytochrome c₃, in *Shewanella oneidensis* MR-1, Applied and Environmental Microbiology, vol. 66, No. 9, 4168-4171, (2000).
13. **A.I. Tsapin**, M.G. Goldfeld, G.D. McDonald, K.H.Nealson, J. Mohnke, B. Moscovitz, P. Solheid, K. kemner, K. Orlandini, Ferrate (VI) as a possible oxidant on the Martian surface, in A New Era in Bioastronomy, eds. G. Lemarchand and K. Meech, vol. 213, 315-318, (2000)
14. **A. Tsapin**, M. Storrie-Lombardi, G. D. McDonald, K.H. Nealson, and J.W. Nesson, Application of computer tomography (CT) for search of life in extreme environments, in A New Era in Bioastronomy, eds. G. Lemarchand and K. Meech, vol. 213, 387-389, (2000).
15. K.M.Kemner, S.D.Kelly, K.A.Orlandini, **A.I.Tsapin**, M.G.Goldfeld, Y.D.Perfiliev, and K.H.Nealson, XAS investigation of Fe(VI), J.Synchrotron Radiation, vol. 8, 949-951, (2001).

- 16.** A. I. Tsapin, I. Vandenberghe, K. H. Nealson, J. H. Scott, T. E. Meyer, M. A. Cusanovich,4 E. Harada, T.Kaizu, H. Akutsu, D. Leys, and J. J. Van Beeumen, Identification of a Small Tetraheme Cytochrome c and a Flavocytochrome c as Two of the Principal Soluble Cytochromes c in *Shewanella oneidensis* Strain MR1, Applied and Environmental Microbiology, , Vol. 67, No. 7, 3236-3244, (2001).
- 17.** M.C.Storrie-Lombardi, W.F.Hug, G.D.McDonald, **A.I.Tsapin**, and K.H. Nealson, Hollow Cathode Ion Lasers for Deep Ultraviolet Raman Spectroscopy and Fluorescence Imaging, , Review of Scientific Instruments, Vol.72, number 12, pp 4452-4459, (2001).
- 18.** A. Tsapin, K. Nealson, and M. Goldfeld, Treatment with ferrates eliminates DNA and proteins, NASA Tech Briefs, vol. 25, No. 9, p. 54, (2001)
- 19.** Brinton, K. L. F., **A. I. Tsapin**, D. Gilichinsky and G. D. McDonald, Aspartic acid racemization and age-depth relationships for organic carbon in Siberian permafrost. Astrobiology, Vol. 2, number 1, pp. 77-82, (2002)
- 20.** D. Yu. Sorokin, V. M. Gorlenko, T. P. Tourova, **A. I. Tsapin**, K. H. Nealson, and G. J. Kuenen, Thioalkalimicrobium cyclum sp. nov., and Thioalkalivibrio jannaschii sp. nov., new species of haloalkaliphilic, obligately chemolithoautotrophic sulfur-oxidizing bacteria from hypersaline alkaline Mono Lake (California), International Journal Systematic and Evolutionary Microbiology, vol. 52, pp. 913-920, (2002).
- 21.** David Leys, Terrance E. Meyer, **Alexandre S. Tsapin**, Kenneth H. Nealson, Michael A. Cusanovich, and Jozef J. Van Beeumen, Crystal structures at atomic resolution reveal the novel concept of [chi] electron-harvesting' as a role for the small tetraheme cytochrome c, J. Biol. Chem., v. 277(38), pp. 35703-11., 2002
- 22.** A. Tsapin, M. Goldfeld, and K. Nealson, Viking's experiments and hypothesis that Fe(VI) is a possible candidate as Martian oxidant, Icarus, v. 159, p. 268, (2002)
- 23.** G.McDonald, **A. Tsapin**, and D. Gilichinsky, Amino acid racemization as an indicator for in situ molecular repair processes in permafrost microorganisms, International Journal of Astrobiology, v.1, #2, p 102, (2002)
- 24.** R. Bhartia, **A. Tsapin**, A. Thompson, R. Wang, Visualization of surficial and internal structure and chemistry using CT and neutron imaging, International Journal of Astrobiology, v.1, #2, p.89, (2002)
- 25.** S. K. Dedushenko , Yu. D. Perfiliev, M. G. Goldfeld, and **A. I. Tsapin** Mossbauer Study of Hexavalent Iron Compounds, Hyperfine Interactions v. 136/137, pp.373-377, (2001)
- 26.** J. F. Heidelberg, ... **A.Tsapin**, et al. (ca. 50 co-authors), Genome sequence of the dissimilatory metal ion-reducing bacterium *Shewanella oneidensis*, Nature Biotechnology, v. 20(11), pp. 1118-23, 2002
- 27.** K.H.Nealson, **A. Tsapin**, M. Storrie-Lombardi, Searching for life in the universe: unconventional methods for an unconventional problem, International Microbiology, v. 5, pp. 223-230, (2002)
- 28.** E. Harada, J. Kumagai, K. Ozawa, S. Imabayashi, **A. Tsapin**, K. Nealson, T. Meyer, M. Cusanovich, H. Akutsu, A Directional Electron Transfer Regulator Based on Heme-Chain Architecture in The Small Tetraheme Cytochrome c from *Shewanella oneidensis*, FEBS letters, v. 532, pp. 333-337, 2002
- 29.** A.Tsapin, K. Nealson, J. Nesson, C. Smith, Using computer tomography (CT)) for detection life in rocks, permafrost, and ice. Application for Astrobiology. Chapter in the book Life in Cold Enviroments, ed. J. Castello and S. Rogers, Princeton, in press, 2003.
- 30.** A.Tsapin, G. McDonald, W. Abbey, R. Bhartia. W. Hug, Fluorescence and amino acids measurements in water column of Antarctic subglacial lakes. Astrobiology, vol. 2, num. 4, p. 632, 2002.
- 31.** Corien Bakermans, **Alexandre I. Tsapin**,Virginia Souza-Egipsy, David A. Gilichinsky and Kenneth H. Nealson, Reproduction and metabolism at -10 C of bacteria isolated from Siberian permafrost, Environmental Microbiology vol. 5, #4, 321-326, 2003.
- 32.** Giometti CS, Khare T, Tollaksen SL, **Tsapin A.**, Zhu W, Yates JR 3rd, Nealson KH., Analysis of the *Shewanella oneidensis* proteome by two-dimensional gel electrophoresis under nondenaturing conditions, Proteomics, May, 3(5):777-85, 2003.
- 33.** A. Tsapin, and G. McDonald, Microorganisms buried permafrost – are they in a dormant state or is their metabolism slowed down? in Permafrost (eds. Phillips, Springman and Arenson), 1141-1144, 2003.
- 34.** Terry E. Meyer ; **Alexandre I. Tsapin**, Isabel Vandenberghe ; Lina De Smet ; Dmitrij Frishman ; Kenneth H. Nealson ; Michael A. Cusanovich ; Jozef J. Van Beeumen, Identification of 42 Possible Cytochrome C Genes in the *Shewanella oneidensis* Genome and Characterization of Six Soluble Cytochromes, OMICS: A Journal of Integrative Biology, v. 8, Number: 1, 57 – 77, 2004.
- 35.** A.Tsapin, G. McDonald, Terrestrial permafrost as a model environment for Bioastronomy, in Bioastronomy 2002: Life Among the Stars,Eds. Ray P. Norris & Frank H. Stootman, Astronomical Society of the Pacific, San Francisco, ISBN 1583811710, Library of Congress Control Number: 2004107802, 2004
- 36.** Yoshikawa, K., Romanovsky, V., Duxbury, N., Brown, J., and **Tsapin, A.** 2004, The use of geophysical methods to discriminate between brine layers and freshwater taliks in permafrost regions. Jour. Glaciology and Geocryology, vol.26. 301-309, 2004
- 37.** Gorlenko V., **Tsapin A.**, Zorigto N., Teal T., Tourova T., Engler D., Mielke R., Nealson, K., Anaerobranca californiensis sp. nov., an anaerobic, alkalithermophilic, fermentative bacterium isolated from a hot spring on Mono Lake, International Journal of Systematic and Evolutionary Microbiology. Vol.54 pp. 739-743 (2004)
- 38.** Eugene Kolker, **A. Tsapin**, et al.Global profiling of *Shewanella oneidensis* MR-1: Expression of hypothetical genes and improved functional annotations, **PNAS**, February 8, vol. 102, no. 6 , pp.2099–2104, 2005

- 39.** Hug, W.F., R. Bhartia, **A. Tsapin**, A.L. Lane, P. G. Conrad, K. Sijapati, and R.D. Reid, "Status of miniature integrated UV resonance fluorescence and Raman sensors for detection and identification of biochemical warfare agents", SPIE Optic East Conference, Boston, MA, Oct. 22-26, (2005).
- 40.** Brent C. Christner^{1‡}, George Royston-Bishop², Christine M. Foreman^{1,3}, Brianna R. Arnold¹, Martyn Tranter², Kathleen A. Welch⁴, W. Berry Lyons⁴, **Alexandre I. Tsapin**⁵, Michael Studinger⁶, and John C. Priscu^{1†}, Limnological conditions in subglacial Lake Vostok, Antarctica, Limnology and Oceanography, June 2006.
- 41.** Hand, K. P., R. W. Carlson, and **A. I. Tsapin**. Laboratory analysis of water, hydrocarbon and ammonia ice mixtures exposed to high energy irradiation. *Bull. Amer. Astron. Soc.* **38**, 606 (#662.607), 2006..
- 42.** Grazyna E. Orzechowska, Jay Goguen, Paul V. Johnson, **Alexandre Tsapin**, and Isik Kanik, Ultraviolet Photolysis of Amino Acids in a 100K Water Ice Matrix: Application to the Outer Solar System Bodies, *Icarus*, v. 187, pp.584-591, 2007.
- 43.** E. N. Boldareva, , I. A. Bryantseva, **A. Tsapin**, K. Nelson, , D. Yu. Sorokin,, T. P. Tourova, V. A. Boichenko. I. N. Stadnichuk, and V. M. Gorlenko, The New Alkaliphilic Bacteriochlorophyll *a* Containing Bacterium *Roseinatronobacter monicus* sp. nov. from the Hypersaline Soda Mono Lake (California, United States), *Microbiology*, Vol. 76, No. 1, pp. 82–92, 2007
- 44.** Rohit Bhartia, William F. Hug, Everett C. Salas, Ray D. Reid, Kripa K. Sijapati, **Alexandre Tsapin**, William Abbey, Pamela G. Conrad, Kenneth H. Nealson, Arthur L. Lane, Native fluorescence spectroscopy: classification of organic and biological materials with deep UV excitation, *Applied spectroscopy*, v. 62, #10, 1070-1077, 2008
- 45.** Moogega Cooper, Gregory Fridman, David Staack, Alexander Gutsol, Victor N. Vasilets, Shivanthi Anandan, Young I. Cho, Alexander Fridman, and **Alexandre Tsapin**, Decontamination of Surfaces from Extremophile Organisms Using Non-thermal Atmospheric Pressure Plasmas, *IEEE transactions on plasma Science*, vol. 37, 41-46 (2009)
- 46.** Zorigto Namsaraev1, Vladimir Akimov2, Ekaterina Barinova1, **Alexandre Tsapin**3, Kenneth Nealson4, Vladimir Gorlenko1 MARINOSPIRILLUM CELERE SP. NOV., A NOVEL ALKALIPHILIC HELICAL BACTERIUM ISOLATED FROM MONO LAKE, *International Journal of Systematic and Evolutionary Microbiology*, 2010 <http://ijs.sgmjournals.org/misc/pip.shtml>)

Public Lectures and Participation in Recent Conferences 2009

A.Tsapin and W. Hug, Stop-Flow Raman system with excitation at 248 nm; The Conference on Micro-Raman Spectroscopy and Luminescence Studies in the Earth and Planetary Sciences, April 2–4, 2009, at the Max-Planck-Institut für Chemie, Abteilung Geochemie, Mainz, Germany.

<http://www.lpi.usra.edu/meetings/spectroscopy2009/spectroscopy20093rd.shtml>

A.Tsapin, Interaction of DBD plasma with DNA and amino acids, 2nd International Conference on Plasma Medicine, San Antonio March 15-20. <http://plasma.mem.drexel.edu/icpm-2/>

2007

A. Tsapin, W. Abbey, Application of X-ray tomography for life detection inside rocks. Blueberries. Bioastronomy 2007, San Juan, Puerto Rico, July 2007.

A. Tsapin, W. Abbey, Application of X-ray tomography for study “Blueberries” from Utah desert. Workshop of Skyscan CT scanners users, Brugge, Belgium, April 16-18, 2007

2006

Alexandre Tsapin*a, William Hugb, Sambit, Ray Reid, Development of a self-contained, subglacial, native fluorescence detector for measurement of organic molecules and chemicals of life. "Subglacial Antarctic Lake Environments (SALE) in the International Polar Year (IPY) 2007-2008: Advanced Science and Technology Planning, 24-26 April, 2006, Grenoble, France.

Alexandre Tsapin*a, William Hugb, Rohit Bhartiac, Ray Reid, A self-contained native fluorescence detector for measurement of organic molecules and chemicals of life, European Symposium on Security and Defense 2006 (11-15 September 2006, Stockholm, Sweden.

Jay D. Goguen¹, G. Orzechowska¹, P. Johnson¹, **A. Tsapin**¹, I. Kanik¹, W. Smythe¹,Decomposition of Amino Acids in 100 K Ice by UV Photolysis: Implications for Survival on Europa, 38th Meeting of the AAS Division for Planetary Sciences 8-13 October 2006, Pasadena, CA

Kevin P. Hand¹, R. W. Carlson², **A. I. Tsapin**², Laboratory Analysis Of Water, Hydrocarbon And Ammonia Ice Mixtures Exposed To High-energy Electron Irradiation, 38th Meeting of the AAS Division for Planetary Sciences 8-13 October 2006, Pasadena, CA

Hug, W.F., R. Bhartia, R. Reid, A. **TSAPIN**, A. Lane, and P. Conrad, "Ultra-sensitive reagentless water contamination sensors using deep UV laser induced native fluorescence and resonance Raman spectroscopy", 2006 International Symposium of Spectral Sensing Research, Bar Harbor, ME. 29 May - 2 June, 2006.

A. **TSAPIN**, ,Bhartia, R.,E.C. Salas, W.F. Hug, K.Sijapati, A.Lane, R.Reid, and P.Conrad, "Native Fluorescence Spectroscopy: Wavelength Dependence in Differentiating Organic and Biological Compounds and Environmental Backgrounds", Pittsburgh Conference 2006, Orlando, FL., March 13-17, 2006.

2005

Hug, W.F., R. Bhartia, A. **TSAPIN**, A.L. Lane, P. G. Conrad, K.Sijapati, and R.D. Reid, "Status of miniature integrated UV resonance fluorescence and Raman sensors for detection and identification of biochemical warfare agents", Proceedings of the International Society of Optical Engineering, Vol. 5994, Oct. 22-26, 2005.

A. Tsapin, Interdisciplinary approach to life detection in ice cores, EGU meeting, Vienna, Austria, April 26, 2005, Oral presentation.

A. Tsapin, Amino Acids distribution in Atacama Desert soil. De novo Amino Acid Synthesis, AGU annual meeting, San-Francisco, December 9, 2005 Poster

2004

A.Tsapin, Study of the oldest animal fossils with computer tomography, 32nd International Geological Congress, Florence, Italy, August 24, 2004 (oral presentation).

A.Tsapin, Chirality as a biomarker. New approach for life detection, Bioastronomy conference, Reykjavik, Island, July 14, 2004 (oral presentation).

2003

A. Tsapin, and G. McDonald, Microorganisms buried in permafrost – are they in a dormant state or is their metabolism just slowed down?, Intern. Conf. On Permafrost, Zurich, Switzerland, July, 2003

Christner, B.C., J.C. Priscu, and A.I. Tsapin. Earth's icy biosphere: Examining the potential for the preservation of life in ice on Mars. Oral presentation at the Third International Conference on Mars Polar Science and Exploration (Special session in memory of David Wynn-Williams). Lake Louise, Alberta, Canada, October 2003.

A.Tsapin, CT as a life detection method, Harvey Mudd school, April 2003, public lecture

A.Tsapin, Chirality as a biomarker: a new approach for life detection, EGS-AGU-EUG Joint Assembly, Nice, France, April 6-11, 2003 (invited talk).

J. G. Jurewicz¹, S. M. Jones¹, A. Tsapin¹, D. T. Mih¹, H. C. Connolly Jr^{2,3}, and G. A. Graham⁴, LOCATING STARDUST-LIKE PARTICLES IN AEROGEL USING X-RAY TECHNIQUES. LPSC, March 2003, oral presentation)

A. Tsapin, I. Kanik, L.W. Beegle, L. Wu, and R. G. Cooks, Determining d/l ratios of amino acids found in ice above lake Vostok using esi/cit mass spectroscopy, LPSC, Houston, TX, March 2003, oral presentation

2002

Hug, W.F., R.D.Reid, R.Bhartia, M.C.Storrie-Lombardi, A. **TSAPIN**, and A.L.Lane, "Deep UV Laser Induced Native Fluorescence Detector forOrganic Detection and Classification", 29th Annual Conference of theFederation of Analytical Chemistry and Spectroscopy Societies, Providence, RI, Oct. 13-17, 2002.

A.Tsapin, Use Of Amino Acid Racemization To Investigate The Metabolic Activity Of “Dormant” Microorganisms In Siberian Permafrost AGU 2002, Fall meeting, San-Francisco, December 6-12, 2002 (oral presentation)

A.Tsapin, Using CT for life detection in rocks and ice, Public lecture in Cal State University, Central LA, October 8, 2002

A.Tsapin, Imaging as a tool for life detection, Public lecture, Teaching conference, Pasadena, April 20, 2002

A. Tsapin, G. McDonald, and D. Gilichinsky, Terrestrial permafrost as a model environment for bioastronomy, Bioastronomy, Hamilton Island, Great Barrier Reef, Australia, July 8-12, 2002 (oral presentation)

Alexandre Tsapin ,Vladimir Gorlenko, Zorigto Namsaraev, Tatyana Tourova, Diane Engler, and Kenneth Nealson Novel anaerobic thermoalkaliphilic bacterium *Anaerobranca californiensis* sp.nov., dissimilatory reducing sulfur, Fe(III) and other inorganic electron acceptors, ASM 2002, general meeting, Salt Lake city, April 2002, (poster)

A. Tsapin, Using computer tomography for detection life in rocks, permafrost, and ice. Application for Astrobiology. Life detection – problems and perspectives, International Astrobiology conference, S. -Petersburg, Russia, March 22-28, 2002. (Plenary speaker)

C. C. Allen, A. I. Tsapin, K. Kuebler, L. Haskin, and A. Wang Analysis inside the box – studying rock and soil in biological quarantine, Lunar and Planetary Science Conference XXXIII, March 2002. Houston, (Oral presentation)

2001 and before

A.Tsapin, Using computer tomography for detection life in rocks, permafrost, and ice. Application for astrobiology, GSA meeting, Boston November 3-8, 2001, (invited speaker)

A.Tsapin, Computer tomography for detection life in rocks, permafrost, and ice, Life in Ancient Ice NSF workshop, Oregon, June 30-July 4, 2001, (invited speaker)

A.Tsapin and K. Nealson, Using microCT for life detection in minerals, EUG XI 8th - 12th April 2001, Strasbourg, France, (oral presentation)

A.Tsapin and K. Nealson, Application of Computer Tomography for Life Detection, NAI Annual Meeting, April 10-12, 2001, Washington DC,(poster)

A.Tsapin, K.Nealson, Using Computer Tomography For Locating Endolithic Organisms, AGU Annual Meeting, December 15-19, 2000, San-Francisco, USA, (invited speaker)

A.Tsapin, K. Nealson, J. Hagadorn, and J. Nesson, Using of x-ray imaging and CT methods for locating life in complex mineralogical and lithic environments, GSA Annual meeting, November 10-15, 2000, Reno, Nevada, (invited speaker)

D. Leys, A. Tsapin, T. Meyer, A. Cusanovich, Y. Guisez, J. VanBeumen, Crystal structures of the tetraheme flavoprotein enzyme fumarate reductase from *Shewanella putrefaciens* strain MR-1, 13th International congress Flavbins and Flavoproteins, Konstanz, Germany, July 29 – August 4, 1999. (Oral presentation)

A.Tsapin, Expression of genes for cytochromes c in *Shewanella oneidensis* MR-1, 3rd Annual Midwestern molecular microbial ecology meeting, Aug. 2-3, 1997, Milwaukee, (oral presentation)